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Learning from pedagogical experiments

An alternative reading of architectural design studio

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Synopsis

Pedagogical experiments in the second half of the twentieth century are regarded as evidences of thresholds in architectural design education. Many traditional approaches including apprenticeship, reproduction of existing forms and structures are left behind; and many novel approaches became valid including spatial investigations, using tools and new technology, critical thinking, non-linearity, social and political engagement, interdisciplinarity, participation and questioning the role of architecture. From this point, this study aims to illuminate how these pedagogical experiments challenged and transformed the domain of architecture and beyond. In order to address this transformation, the study presents and discusses the pedagogical experiments through the framework of five themes: systematicity, linearity, simultaneity, participation and complexity.

Key words: Architectural education, Design pedagogy, Design studio, Pedagogical experiments.

1. Background

The present form of the design studio traces its origin back to the Ecole des Beaux-Arts and the Bauhaus. Although the Ecole des Beaux-Arts was established in the seventeenth century; it maintained a stance against apprenticeship in the nineteenth century (Cret, 1941). The origin of academic studio culture coincides with this position, requiring learning by doing as a principle focus of architectural education (Anthony, 2011, p. 223).

Design studio culture was introduced to North American schools in the early twentieth century by Paris-trained professors. 'Over 500 Americans attended the Ecole des Beaux-Arts between 1850 and 1968' and they brought the design studio tradition to North America (Anthony, 2011, p. 224). The German Bauhaus School (1919-1933) replaced the influence of Ecole des Beaux-Arts with a design studio inspired by the machine, the mass production and the modern technology (Anthony, 2011, p. 224).

In the second half of the twentieth century, several pedagogical experiments across the globe played a crucial role in shaping architectural discourse and practice. Through these experiments a variety of strategies and tactics had been developed which then influenced the field of architecture and led the following contributors (Colomina et al., 2012). These evidences shows that it is critical to understand and rethink the pedagogical experiments for revealing their influence on architecture and other disciplines.

2. Research framework

This paper forms part of a wider study¹ concerning a comparative analysis of experiments, practices, and positions in architectural design studio. This part of the study covers a reading of the pedagogical experiments from the second half of the twentieth century through five recurrent themes. Selection of the themes was based on the repeating patterns revealed within the scope of the doctoral research and they can be listed as *systematicity*, *linearity*, *simultaneity*, *participation* and *complexity*.

First, methodical approaches including medium, tools and structural organisations are grouped under *Systematicity*. Second, sequential approaches concerned with the process and temporal subjects are grouped under *Linearity*. Third, simultaneous activities and contexts applied at the same time are grouped under *Simultaneity*. Fourth, participatory processes including actors, activities and intentions are grouped under *Participation*. And lastly, subjects including multiple dimensions such as discovery and atmosphere are grouped under *Complexity*.

3. Themes

For understanding the precedent pedagogical experiments and their impact, forty-one selected case studies from 'Radical Pedagogies'² research project are listed, summarised and categorised according to their timeframe,

¹ "Experiments, Practices, and Positions in Architectural Design Studio" is a PhD study by the author.

² "Radical Pedagogies" is an ongoing multi-year collaborative research project led by Beatriz Colomina with a team of Ph.D. students of the School of Architecture at Princeton University.

performers, institutions, tactics, and their relation to themes of this study (Fig. 1). Below, the impact of these experiments on the domain of architecture and related fields are explained under five categories.

First of all, tactics of learning with tools can be considered systematic regarding their methodological character. There are some common characteristics such as using physical environments for the spatial investigations; and virtual environments for computer-aided design researches. Model research then extended to virtual environments; and initial attempts in computer-aided design are realised in Harvard GSD pioneering to an innovation such as GIS software.

Second, linear and non-linear tactics were one of the major concerns of pedagogical experiments. Some schools aimed to change curricular structures through non-linear approaches; such as emphasising design process, forming vertical studio structures, promoting remote teaching methods and experimentation. For instance, Architectural Association developed vertical studio teaching with the unit system; Open University promoted remote teaching methods; WSPA set up a non-hierarchical model among students and teachers; IAUS suggested an open plan for students to develop their course schedule.

Third, simultaneity indicated social and political engagements to design studio. Some groups gave rise to change the focus of architecture from sole form-making to a new kind of architecture that is simultaneously connecting with society. In other words, they were combining the content and the context in different realms. For instance, FAU USP was linking form-making to political change; and La Tendenza focused on being socially and politically engaged (Bottazzi, 2012, p.104) with the matters of architecture.

Fourth, several tactics emphasised participation among various actors, in different forms with multiple aims in the history of architectural education; and interdisciplinarity and participatory actions were specifically underlined within these tactics. For instance, Ulm School, Arezzo, University of Stuttgart, MIT and ILA&UD had pedagogical experiments with a collaboration of international multidisciplinary groups in which international dialogue, diversity of participants and heteronomy were the main concerns.

Participation was not only significant in the context but in the actions as well. For example, CIAM members opened their ateliers to students; AD, AA and Polyark organised a bus trip for a two-weeks long live project; Kenzo Tange initiated an architectural laboratory; Buckminster Fuller realised workshops within a network of institutions; the NER group approached to city as a temporary and mobile living organism; TU Berlin and Cornell University focused on city as an architectural laboratory; and Pratt Institute School of Architecture employed design-build projects.

Year	Performer	Institution, Place	Tactic	Theme
1972	Emilio Ambasz	The new domestic landscape exhibition at MoMA	Discussing design process with symbols and social critique	Simultaneity
1952-1959	Enrico Peressutti	Princeton	Confronting with the field	Systematicity
1971-1979	Vittorio Giorgini	Pratt Institute	Learning by building	Participation
1951-1965	Pietro Belluschi and György Kepes	MIT	Encouraging collaboration of visual arts and science	Participation
1976-1983	Aldo Rossi	La Escuelita	Experimenting without control over curricula	Linearity
1947-1952	Ernesto Nathan Rogers, et al.	Instituto de Arquitectura y Urbanismo	Combining pedagogy with research, public institutions and local companies	Participation
1964-1984	Howard Fischer, et al.	LCGSA Harvard GSD	Using new media, innovating interfaces	Systematicity
1967-1985	Nicholas Negroponete, Leon Grossier, Jerome Wiesner	The Architecture Machine Group and The Media Lab MIT	Developing new methodologies	Systematicity
1964-1985	John Hejduk	The Cooper Union	Supporting the independent and personal voice of the students	Participation
1951-1957	The Texas Rangers	University of Texas Austin	Using spatial investigations as a device	Systematicity
1965-1975		IAUS and Princeton	Promoting open-plan for studio organisation	Linearity
1955-1970	R. Buckminster Fuller	Southern Illinois Institute of Carbondale	Organising a network of workshops	Participation
1933-1957	Josef and Anni Albers, et al.	Black Mountain College	Emphasising process against results	Linearity
1972-1980	The Center for Independent Living	University of Berkeley	Developing design concepts for impaired mobility, sight and hearing	Complexity
1972-1976		Facultad de Arquitectura, Universidad Nacional Autonoma de Mexico	Manifesting for a new model with social and political aspects	Simultaneity
1952-1972	Alberto Cruz, Godofredo Iommi, Claudio Girola	Escuela e Instituto de Arquitectura PUCV	Using lived experiences to underline plastic aspects of architecture	Systematicity
1943-1963	Tibor Weiner	Escuela de Arquitectura, Universidad de Chile	Correlating image and project, method and purpose	Complexity
1971-1975	Taller Total	Facultad de Arquitectura y Urbanismo, Universidad Nacional de Cordoba	Focusing on changing role of architecture in the developing areas of the world	Complexity
1962-1969	Vilanova Artigas	Faculdade de Arquitectura e Urbanismo da Universidade de Sao Paulo FAU USP	Linking form-making and intention to political change	Simultaneity
1948-1973	Kenzo Tange	Tange Lab	Initiating an architecture laboratory	Participation
1975-1981	Katrin Adam, et al.	The Women's School of Planning and Architecture WSPA	Learning from students	Linearity
1959-1968	Enzo Frateili	HfG Ulm	Forming an international multidisciplinary group	Participation
1957-1968	Alexei Gutnov, the NER Group and Giancarlo De Carlo	Moscow Institute of Architecture MARKHI and Triennale di Milano	Seeing the city as a living organism	Participation
1976	Aldo Rossi, Bruno Reichlin, Fabio Reinhart, Eraldo Consolascio	ETH Zurich	Assembling the images of collective memories, places, and building	Systematicity
1974	Alvaro Siza and the SAAL("Local Mobile Support Device")	Faculdade de Arquitectura da Universidade do Porto	Bridging between the local organisations and architecture with students	Participation
1971-1990	Alvin Boyarsky	The Architectural Association	Promoting vertical studio teaching	Linearity
1973	Peter Murray, Cedric Price	AD/AA/Polyark	Triggering a dialogue between architecture schools and local communities through a live project	Participation

Year	Performer	Institution, Place	Tactic	Theme
1964-1990	Frei Otto	Institute for Lightweight Structures at the University of Stuttgart (ILEK)	Providing a collaboration between architects, engineers, biologists, anthropologists, and historians	Participation
1953-1968	Inge Aicher-Scholl, Otl Aicher, Max Bill, Tomas Maldonado	Hochschule für Gestaltung (HfG)	Working on scalelessness	Systematicity
1965-1977	Oswald Mathias Ungers	TU Berlin and Cornell University	Considering city as an architectural laboratory	Participation
1963-1973	Archizoom Associati, 9999, Gianni Piretti, Superstudio, UFO, and Ziggurat	Università degli Studi di Firenze, Facoltà di Architettura	Occupying the city plazas with temporary installations	Participation
1963	Ludovico Quaroni, Giancarlo De Carlo, Aldo Rossi, Manfredo Tafuri	The Arezzo Course	Organising a collaboration with sociology, economics and geography	Participation
1976-2003	Giancarlo de Carlo	International Laboratory of Architecture and Urban Design ILA&UD	Proposing interventions for real sites	Participation
1964-1971	Leonardo Mosso and Laura Castagno	Politecnico di Torino	Promoting working on dynamic and virtual environments	Systematicity
1961, 1963-1979	Bruno Zevi	Istituto Universitario di Architettura di Venezia IUAV and Università di Roma	Re-interpreting of historical examples	Systematicity
1969	Utopia e/o Rivoluzione	Politecnico di Torino	Questioning the role of architectural education for a revolution	Complexity
1967-1970	Guido Canella	Politecnico di Milano	Making macroeconomic and macro urban analyses in the field	Systematicity
1959-1961	Carlo Cocchia	Politecnico di Milano	Making in-depth analysis of existing buildings	Systematicity
1949-1956	CIAM Summer School	Venice, Italy	Increasing foreign exchange programs and participation of practitioner architects	Participation
1976	The Open University	37th Biennale di Venezia	Promoting remote teaching methods	Linearity
1963-1971	Aldo Rossi	Istituto Universitario di Architettura di Venezia IUAV and the Politecnico di Milano	Transforming design studio as a research device	Linearity

Figure 1.

Fifth, the complex role of architectural education and organisation of studies were emphasised. For instance, at the exhibition entitled *Utopia e/p Rivoluzione*, there were two main opinions about the role of architecture: revolution and intensive use of technology. Moreover, *La Tendenza* aimed to enhance the discipline's functional role within the contemporary technological and socioeconomic condition (Scott, p.49) with the belief that architecture had a political role to improve and shape the society (Bottazzi, 2012, p.104).

4. Findings

Listed pedagogical experiments are then graphically represented on a timeline according to five categories (Fig. 2). This diagram shows that participation is the most popular theme since the late 1940s. It is followed by systematicity which is mostly emphasised between the 1950s and the 1990s. Linearity is the earliest theme based on the traces from the 1930s. Complexity is a rarely employed between the 1940s and the mid-1980s. Simultaneity is the least preferred theme that is emphasised between the 1960s and the 1980s.



Figure 2.

It is important to acknowledge that the majority of pedagogical experiments were employed between the 1960s and the 1970s including primarily participation and systematicity by

- confronting with real life situations,
- learning by building,
- providing collaboration of visual arts and science,
- including public institutions and local companies,
- using new media, innovating interfaces,
- developing new methodologies,
- supporting the independent and personal voice of the students,
- organising workshops,
- using spatial investigations and live projects,
- forming international multidisciplinary groups,
- promoting to work on dynamic and virtual environments, and
- encouraging foreign exchange programs.

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Biography

Ayşe Zeynep Aydemir. Architect and studio tutor with a research practice on architectural design learning. She received BArch (2008) and MSc in Architectural Design (2011) degrees from Istanbul Technical University. She taught architectural design studios at ITU School of Architecture between 2010-2017. She's been a visiting PhD candidate as a TUBITAK scholar at KU Leuven Faculty of Architecture in Ghent and Brussels between 2014-2016 and worked as a studio tutor in International Master of Architecture at the same faculty during Fall 2015. She completed her jointly supervised Ph.D. entitled 'Experiments, Practices and Positions in Architectural Design Studio' at KU Leuven and ITU in 2017, supported by ITU Scientific Research Projects Coordination Unit.

Currently, she teaches at MEF University Faculty of Arts, Design and Architecture, where she coordinates the Architectural Design Graduate Programme. Her research and teaching interests include new pedagogies and new production techniques, living laboratories, design-build studios, bottom-up approaches, co-create, discovery and experimenting in architectural design studios